Equine FE 3011 Reports

KIC RAK

APQ-56 Improvement Program

May 7, 1957

SYSTEM

XH-2 XH-3 NAVY — 2.17 Recorder Cooling - [redacted] STAT

Drafting is still working on bringing XH-2, XH-3, and Navy recorder drawings up to date to show the cooling modification. Still waiting for parts from Model Shop to complete modification of serial numbers 02 and 03 XH-2 recorders and all three XH-2 cameras - estimated date of this modification is 5/13. Parts are now available at Marietta, Georgia to modify serial number 01 XH-3 recorder - serial number 02 XH-3 recorder was modified on 4/19.

XH-2 XH-3 NAVY — 4.13 R.F. High Voltage Power Supply - [redacted] STAT

The Rexolite mold was subjected to thermal cycling to determine the bonding quality of the adhesive used. During the fifth cycle of the thermal shock test of 2 hours at +85°C then 2 hours at -55°C, the Rexolite mold material developed a crack that let the oil escape. The unit was allowed to continue through 10 complete cycles to observe the effect on the bonding of the Rexolite. The bonding cracked open on most of the joints, also on closer investigation the adhesive use did not fuse well enough to the Rexolite to produce a good bond. A search for a better Rexolite adhesive has been undertaken. To date no satisfactory adhesive has been found. The 3M Company (the prime source of adhesives) has been contacted, but as yet no answer. Meantime, another unit is being prepared for immersion in oil as soon as a satisfactory adhesive is found. Another possibility, in the silicone line, is a vinyl silicone which is a "jello" type of material when cured. A mold would be required to retain physical rigidity; however, no oil leakage problem would be present.

All — 6.19 P. E. Cell [redacted] STAT

Three P. E. Cell Test Sets are being built and tested to establish the sensitivity of P. E. Cells. All sets have been built. The correlation between sets with any one bulb is ±5%. The correlation between sets with various bulbs is ±10%. We are now investigating the possibility of rerating the lamp current for each lamp to obtain the desired output to the P. E. cell. This rerating would give a current distinctly different from the previous lamp calibration by E.T.L.

All — 12.18 Pulse Cable Connectors - [redacted] STAT

No change since last report.

Time Shared | 13.19 | AGC - [redacted] | STAT

Design a new AGC that will be less susceptible to r-f interference and to stray audio pickup.

Drafting is nearing completion of the drawings of the new AGC.

The Model Shop has finished building all the new style cables for testing purposes.

Time Shared | 17.14 | Wide Band Receiver - [redacted] | STAT

No change since last report.

All | 19.15 | Receiver Design - [redacted] | STAT

The pre-amplifier, post-amplifier and video amplifier were cascaded and their operation noted under R.F. and I.F. signal conditions.

The limit level of the video amplifier was set at 20 volts and the gain of the system was adjusted to give an average noise output of approximately 6 volts. This particular mode of operation proved to be wrong as the noise itself was driving the video amplifier to the limit level. A measurement of the average noise output was then made on the system being used in the laboratory. The average value of the noise output under normal operating conditions was found to be 1.5 volts D.C. Using this new value for the noise level further tests are being made.

All | 20.11 | Pulse Width - [redacted] | STAT

No change since last report.

All | 21.13 | Pulse Width (Quick Fix) - [redacted] | STAT

No change since last report.

All | 22.10 | Resolution Test Set - [redacted] | STAT

A means of measuring recorder resolution is needed in the field. Eight resolution test sets are being built by SR for the Time Shared System using commercial type construction. Construction is progressing.

Time Shared XH-3 NAVY | 24.5 | Deflection Driver Drift - [redacted] | STAT

Three trials of 1 hour each with recorder top on were made under following deflection driver conditions:

(1) 6AU6 tubes operating at 5 volts on filament, everything else normal.
(2) 6AU6 tubes operating at 6.3 on filament, external filament voltage source, everything else normal.
(3) Operation as per normal operation in set.

(Cont'd.)

24.5 Deflection Driver Drift (Cont'd.)

After approximately 15 minutes after turn on, there was no measurable change of trace spread for any of above three tests, except under 20° drift condition when appreciable change occurred. More long time tests will be made with other changes.

LEGEND
A - APPLY
N/A - NON APPLICABLE
W/I - WAITING SHIPPING INSTRUCTIONS
W/S - WILL SHIP
S - SHIPPED
I - INSTALLED

SYSTEMS

KIT NO	DESCRIPTION	TIME SHARED 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	XH-2 01	02	03	XH-3 01	02	03	04	05	NAVE 01	XH-1 01	02	03	04	05	06	07	08	09	10	Beher Set	REMARKS
1	Recorder Cooler	S 4/16	S 4/16	S 4/23	S 3/13	S 3/13	W/S 5/[illegible]	S 5/3	S 5/3	S 5/3	S 5/3	S 5/3	S 5/1	BIP	→				I 3/25	W/S 5/10	W/S 5/10	S 4/29	I 4/19	In New DESIGN			A	NA →											
2	Camera Cooling	I 3/15	I 3/15	S 3/29	S 3/29	S 3/29	S 3/29	S 4/24	S 4/24	S 4/24	S 4/24	S 4/24	S 4/24	BIP	→				W/S 5/10	W/S 5/1[illegible]	W/S 5/10	N/A →					A	NA →											
3	Camera Servo Motors	S 3/29	S 3/29	S 3/29	S 3/29	S 3/29	S 3/29	DIFFERENT DESIGN →							→				I 4/10	I 4/20	S 3/27	N/A →					BIP	NA →											
4	Focus & Alignment Fixture	S 4/4	S 4/4	S 4/4	S 4/4	S 4/4	S 4/4	N/A	N/A	N/A	BIP →				→				I 4/11	I 4/23	S 4/4	N/A →					BIP	NA →											
5	Recorder 10 KV Power Supply	W/S 5/14	W/S 5/14	W/S 5/14	W/S 5/[illegible]5/14	W/S 5/14	W/S 5/1[illegible]	W/S 5/1[illegible]	W/S 5/20	W/S 5/20	W/S 5/22	W/S 5/22	S 4/24	BIP	→				A	A	A	A	A	A	A	A	BIP	NA →											Will try one Power Supply in System prior to Official Releasing of all P.S.
6	Power Supply Fuse Protection for 28 V.	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	BIP →				→				N/A →																			
7	Focus Alignment Fixture Provide for Rear Antenna Feed	W/S 5/20	W/S 5/20	W/S 5/20	W/S 5/20	W/S 5/20	W/S 5/[illegible]	S 4/24	S 4/16	S 4/16	S 5/3	S 5/3	S 5/3	W/S 5/20	W/S 5/20	W/S 5/20	W/S 5/20	W/S 5/20	N/A →									BIP	NA →											Waiting on P.O. #C5544 Prom. by 5/15/57.
8	Control Panel to Prevent Synchro Damage	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	S 4/5	BIP →		→				A	A	A	S 4/15	I 4/17	BIP →					NA →										
9	Synchronizer - Replace Clutch in Alt. Servo.	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	S 5/1	BIP →					S 4/30	S 4/30	S 5/3	S 4/29	I 4/17	BIP →					NA →										
10	Power Supply Decrease 400 V Ripple	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	S 3/25	BIP	→			N/A →																			
11	Maggie Seal	S 5/2	S 5/2	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/14	W/S 5/1[illegible]	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	BIP →					I 4/2	I 4/5	I 4/9	S 4/29	I 4/18	BIP →					W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	W/S 5/10	BIP	
12	Ant. System Adjust Angle of Pod	N/A	N/A	N/A	N/A	N/A	W/S 5/21	N/A	S 4/23	S 4/23	N/A	BIP	N/A	BIP →					N/A →																			
13	Ground Range Sweep Add Clamping Circuit	S 4/5	S 4/4	S 4/12	S 4/12	S 4/12	S 4/12	S 4/12	S 4/24	S 4/24	S 4/24	S 4/12	S 4/12	S 4/12	S 4/12	BIP	BIP	BIP	I 4/12	I 4/12	S 4/10	S 4/8	I 4/15	In New Design				BIP	N/A →										
14	Cabling & Acces.	N/A	N/A	N/A	N/A	N/A	N/A	W/S 5/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	W/S 5/10	N/A	N/A	N/A →																			
15	AGC Clamp Video Amp.	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	BIP →		→				W/S 5/21	W/S 5/21	W/S 5/21	W/S 5/21	I 4/13	In New Design				BIP	N/A →										Waiting parts on P.O.C16715 Prom. 5/17
16	Name Plates Replace Temporary	N/A →													→				N/A →			S 3/29	S 3/29	N/A →														
17	Cooling Fins Maggie & Klystron	W/S 5/29	W/S 5/29	W/S 5/29	W/S 5/14	W/S 5/14	W/S 5/29	W/S 5/29	W/S 5/29	W/S 5/29	W/S 5/29	W/S 5/20	S 5/1	BIP →					I 4/22	S 4/22	S 4/30	I 4/3	I 4/18	BIP →					S 5/7	S 5/7	S 5/7	S 5/7	S 5/7	W/S 5/29	W/S 5/29	W/S 5/29	W/S 5/29	BIP	Waiting on P.O. 20854 Prom. 5/24. Waiting on Shop Items Promised dates not met.
18	Trigger Circuit (Overload at Turn-On)	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	W/S 5/23	BIP →					W/S 5/23	W/S 5/23	W/S 5/23	S 4/29	I 4/18	BIP →					N/A →										Waiting parts on P.O. 86C16715 Prom. 5/17
19	Rectifier R.F. Head																																					

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